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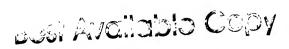




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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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INTERNAT	IONAL PRELIMINAR	Y EXAMIN.	ATION REPORT	ac
	(PCT Article 36 a	nd Rule 70)	& UTIS	20
Applicant's or agent's file reference	FOR FURTHER ACTIO	See Notifi Preliminary	cation of Transmittal of Interr Examination Report (Form PCT/IPE.	iatio A/4
International application No. PCT/FR2003/001998	International filing date (day 27 juin 2003 (27.0		Priority date (day/month/year) 02 juillet 2002 (02.07.2002)	
International Patent Classification (IPC) or H04S 1/00	national classification and IPC			
Applicant	THALES			
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This international preliminary exar and is transmitted to the applicant a		ed by this Intern	national Preliminary Examining Auth	orit
2. This REPORT consists of a total of	f5 sheets, inclu	ding this cover:	sheet.	
amended and are the basis f	or this report and/or sheets con	taining rectifica	on, claims and/or drawings which havations made before this Authority (se	ve l ee I
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3. This report contains indications rel				
I Basis of the report				
II Priority	6	_1* :		
	•	my, inventive si	tep and industrial applicability	
IV Lack of unity of in		ard to novelty is	nventive step or industrial applicabilit	hv.
V Keasoned statemen	nations supporting such staten	ent	iventive step of industrial applications	χ,
VI Certain documents	s cited			
VII Certain defects in	the international application	•		
VIII Certain observatio	ns on the international applicat	ion		
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Date of submission of the demand	Date	e of completion	of this report	
19 décembre 2003 (19.	12.2003)	25	March 2004 (25.03.2004)	
Name and mailing address of the IPEA/EI	Aut	horized officer		
Facsimile No.	Tele	ephone No.		



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Internation Internation No.
PCT/FR2003/001998

I.	I. Basis of the report					
1. With regard to the elements of the international application:*						
	\boxtimes	the inte	mational application as originally filed			
	図	the des	cription:			
		pages	1-9	, as originally filed		
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		pages		any statement under Article 19		
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3	The	the lar the lar the lar or 55 the regard liminary of	nguage of a translation furnished for the purposes of international search (under Rule 23 nguage of publication of the international application (under Rule 48.3(b)). Inguage of the translation furnished for the purposes of international preliminary examples. It to any nucleotide and/or amino acid sequence disclosed in the international examination was carried out on the basis of the sequence listing: International application in written form.	mination (under Rule 55.2 and/		
	<u> </u>	ī .	ogether with the international application in computer readable form.	•		
	-	ñ	hed subsequently to this Authority in written form.			
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	L_		statement that the subsequently furnished written sequence listing does not go ational application as filed has been furnished.	beyond the disclosure in the		
			tatement that the information recorded in computer readable form is identical to \mathfrak{t} furnished.	he written sequence listing has		
2	ı. [The a	mendments have resulted in the cancellation of:			
l			the description, pages			
١		Ħ	the claims, Nos.			
l		Ħ	the drawings, sheets/fig			
	5	This re	eport has been established as if (some of) the amendments had not been made, since to disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**	they have been considered to go		
	in	this repo	t sheets which have been furnished to the receiving Office in response to an invitation rt as "originally filed" and are not annexed to this report since they do not co	under Article 14 are referred to ntain amendments (Rule 70.16		
		1 70.17). y replacei	ment sheet containing such amendments must be referred to under item 1 and annexed t	to this report.		

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Claims

Claims

Claims

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Interna	application No.		
PCT/FR	03/01998		

1-17

NO

YES NO

v.	citations and explanations supp			
1.	Statement		·	
	Novelty (N)	Claims	1-17	YES
		Claims		NO
	Inventive step (IS)	Claims	1-17	YES

2. Citations and explanations

Industrial applicability (IA)

1. The present international application concerns a system for spatializing at least one sound source, the system generating two spatialized mono channels for each sound source. The system comprises a database, containing an assembly of head-related transfer functions peculiar to the listener, and a data-presentation processor that receives information from each source and comprises a module for calculating relative positions of the sources with respect to the listener. The system further comprises a unit for calculating mono channels by convoluting each sound source with estimated head-related transfer functions of the database with respect to the position of the sound source.

This system is used, for example, in modular avionic equipment for processing data for a pilot.

2. A system of this type is known from prior art document FR 2 744 871 A, discussed on page 1, line 25, to page 2, line 6, and cited in the international search report.

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The other international search report citations are less relevant.

In particular, EP 0 827 361 A concerns a spatialization system in which the stored listener-specific head-related transfer functions are modified for the calculation of the signals in the two mono channels, in order to emphasize the spatialization effect in the forward-backward direction.

US 6 173 061 B concerns a system for spatializing sound sources which is based on head-related transfer functions. This system is designed to compensate the effects of diaphony associated with the two system speakers.

- 3. The claimed spatialization system is defined by the single independent claim, claim 1. Dependent claims 2 to 17 concern preferred embodiments of the claimed spatialization system.
- 4. The claimed spatialization system differs from the available prior art by the feature whereby the datapresentation processor comprises a head-related transfer function selection module with variable resolution adapted to the position of the source relative to the listener.

Therefore the claimed spatialization system is novel (PCT Article 33(2)).

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5. This selection module enables variable resolution to be selected for each head-related transfer function (between a specific point on the sphere and one of the listener's ears), making the claimed spatialization system particularly flexible and enabling the calculation means, that is, the number of processors required, for example, to be reduced (see page 5).

Neither the available prior art nor the general knowledge of a person skilled in the art suggests modifying the known spatialization system using a selection module of this nature. Therefore the claimed spatialization system involves an inventive step (PCT Article 33(3)).

- 6. The invention clearly has industrial applicability (PCT Article 33(4)).
- 7. The embodiments defined in the dependent claims are novel, involve an inventive step and have industrial applicability for the same reasons.